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Anna L. Buczak

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/029,830
Filing Date: December 27, 2001
Appellant(s): BUCZAK ET AL.

Thomas J. Onka
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/14/08 appealing from the Office action mailed 10/16/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,410,344	GRAVES	4-1995
6697504	TSAI	2-2004
2002/0083451	GILL	6-2002
6,125,194	YEH	9-2000
5,740,322	INOUE	4-1998
7,003,792	YUEN	2-2006
2003/0159146	KIM	8-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Art Unit: 2623

Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-8, 14, 15, 17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graves in view of Tsai.

Referring to claim 1, Graves discloses a method for providing hierarchical decision fusion of recommender scores, said method comprising the steps of:

(a) providing a plurality of recommenders at a first level, said recommenders being grouped to at least one of a plurality of predetermined groups (column 8, lines 52-55);

(b) providing a predetermined number of first level fusion centers for receiving an output from each of said recommenders from at least one particular group (figure 8, lines going into part 48);

(c) outputting a decision by each one of said plurality of recommenders grouped in step (a) to a respective first level fusion center, wherein each decision provides a recommendation (figure 8, lines going from part 48 to 50);

(d) each respective first level fusion center performing a first fusing step of the decisions output in step (c) by said recommenders from said at least one particular group (figure 8, part 50);

(e) each respective first level fusion center outputting a first enhanced decision based on the fusion performed in step (d) (figure 8, lines going from part 50 to 52);

(f) providing a plurality of second level fusion centers for receiving the first enhanced decisions output from a group of said first level fusion centers (figure 8, part 52);

(g) each respective second level fusion center performing a second fusing step of the first enhanced decisions received from the group of said first level fusion centers (figure 8, part 52);

(h) each respective second level fusion center outputting a second enhanced decision (figure 8, part GRADE); and

(i) outputting to a user a finally enhanced decision chosen from the enhanced decisions in step (h) (column 2, lines 23-25).

Graves does not disclose a method wherein step (f) is preformed if the first enhanced decisions are not within a predefined range, and otherwise outputting to a user a finally enhanced decision chosen from the enhanced decisions at step (e).

In an analogous art, Tsai teaches a method wherein step (f) is preformed if the first enhanced decisions are not within a predefined range, and otherwise outputting to a user a finally enhanced decision chosen from the enhanced decisions at step (e) (figure 8; column 4, lines 10-17).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the predefined range step taught by Tsai to the method disclosed by Graves. The motivation would have been to enable the result to be available sooner, as it would only pass through the first level of logic.

Referring to claim 2, Graves discloses a method according to Claim 1, wherein the plurality of recommenders provided in step (a) have overlapping topics of interest (figure 3; Note: Each of the categories could describe features of the same television program or movie, and therefore are considered to have overlapping topics of interest.).

Referring to claim 3, Graves discloses a method according to Claim 2, wherein the user's profile contains a plurality of preferences previously recorded (column 8, lines 52-55).

Referring to claim 5, Graves discloses a method according to Claim 1, wherein the first fusing step recited in step (d) is performed by one of weighted average, voting, neural network (column 6, lines 24-26), and Dempster- Shaffer Evidential Reasoning.

Referring to claim 6, Graves discloses a method according to Claim 1, wherein the second fusing step recited in step (g) is performed by one of weighted average, voting, neural network (column 6, lines 24-26), and Dempster-Shaffer Evidential Reasoning.

Referring to claim 7, Graves discloses a method according to Claim 1, wherein step (h) further comprises (i) providing a plurality of third level fusion centers for receiving the second enhanced decisions from the second level of fusion centers, and

Art Unit: 2623

(ii) each of the plurality of third level fusion centers performing a third fusing step of a predetermined number of second enhanced decisions (column 6, lines 30-39).

Claim 8 is rejected on the same grounds as claim 7.

Referring to claim 14, Graves discloses a method according to Claim 11, wherein the finally enhanced step is output to the user via one of wire communication (figure 1, line going from part 17 to 20), wireless communication, fiber optics, LAN/WAN, and Internet.

Referring to claim 15, Graves discloses a system for hierarchical decision fusion of recommender scores, said system comprising:

a central processing unit (figure 2, part 28a);

a memory in communication with said central processing unit (figure 2, part 32a);

a recommender module comprising fusion software for fusing recommendations of a predetermined number of groups (figure 1, part 17);

means for outputting a recommendation to a user (column 2, lines 23-25);

wherein said recommender module provides at least two levels of fusion (figure 8), wherein a plurality of recommendations are fused at a first level to provide a plurality of first enhanced decisions (figure 8, part 50), and said plurality of first enhanced decision are fused at a second level to provide a plurality of second enhanced decisions which are fewer in number than said first enhanced decisions (figure 8, part 52).

Graves does not disclose a method wherein second step is preformed if the first enhanced decisions are not within a predefined range, and otherwise outputting to a user a finally enhanced decision chosen from the enhanced decisions at the first step.

In an analogous art, Tsai teaches a method wherein second step is preformed if the first enhanced decisions are not within a predefined range, and otherwise outputting to a user a finally enhanced decision chosen from the enhanced decisions at the first step (figure 8; column 4, lines 10-17).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the predefined range step taught by Tsai to the method disclosed by Graves. The motivation would have been to enable the result to be available sooner, as it would only pass through the first level of logic.

Claim 17 is rejected on the same grounds as claim 14.

Referring to claim 19, Graves discloses a system according to Claim 15, wherein said means for outputting a recommendation to a user includes a display (figure 1, part 22a).

Referring to claim 20, Graves discloses a system according to Claim 15, wherein said system includes means for storing a cookie on a user's storage device, said cookie containing an identifier of a user profile in said memory (column 8, lines 52-55).

Art Unit: 2623

1. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graves in view of Tsai as applied to the claims above, and further in view of Gill.

Referring to claim 4, Graves and Tsai do not disclose a method according to Claim 3, wherein the previously recorded preferences comprise one of a viewing history, listening history, and literary history.

In an analogous art, Gill teaches a method according to Claim 3, wherein the previously recorded preferences comprise one of a viewing history (figure 11, box 195), listening history, and literary history.

At the time of the invention it would have been obvious for one of ordinary skill in the art to add viewing history to the items considered, as taught by Gill, in the program selecting method disclosed by Graves and Tsai. The motivation would have been to provide more information to the neural network, therefore making the output more accurate and more useful to the user.

Claim 16 is rejected on the same grounds as claim 4.

2. Claims 9-11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graves in view of Tsai as applied to the claims above, and further in view of Yeh.

Referring to claim 9, Graves and Tsai do not disclose a method according to Claim 7, wherein step (h) further comprises (iii) providing a single n th level fusion center, n being an integer greater than 3, said n th level fusion center receiving decisions output from said second level of fusion centers; and (iv) providing an n th fusing step from the second enhanced decisions.

Art Unit: 2623

In an analogous art, Yeh teaches a method according to Claim 7, wherein step (h) further comprises (iii) providing a single n th level fusion center, n being an integer greater than 3, said n th level fusion center receiving decisions output from said second level of fusion centers; and (iv) providing an n th fusing step from the second enhanced decisions (figure 8).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add hidden levels to the neural network, as taught by Yeh, to the method disclosed by Graves and Tsai. The motivation would have been to allow the process to be more accurate.

Claim 10 is rejected on the same grounds as claim 9.

Referring to claim 11, Graves and Tsai do not disclose a method according to Claim 9, wherein the n th level of fusion centers is a fourth level.

In an analogous art, Yeh teaches a method according to Claim 9, wherein the n th level of fusion centers is a fourth level (figure 8, column 11, lines 26-28).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add hidden levels to the neural network, as taught by Yeh, to the method disclosed by Graves and Tsai. The motivation would have been to allow the process to be more accurate.

Referring to claim 13, Graves and Tsai do not disclose a method according to Claim 11, wherein the nth fusion step is performed by one of weighted average, voting, neural network, and Dempster-shaffer Evidential Reasoning.

In an analogous art, Yeh teaches a method according to Claim 11, wherein the nth fusion step is performed by one of weighted average, voting, neural network (figure 8, column 11, lines 26-28), and Dempster-shaffer Evidential Reasoning.

At the time of the invention it would have been obvious for one of ordinary skill in the art to add hidden levels to the neural network, as taught by Yeh, to the method disclosed by Graves and Tsai. The motivation would have been to allow the process to be more accurate.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graves in view of Tsai as applied to the claims above, and further in view of Inoue.

Referring to claim 12, Graves and Tsai do not disclose a method according to Claim 8, further comprising providing a single nth level fusion center, n being an integer greater than 4, said nth level fusion center receiving decisions from a plurality of n-1 level fusion centers, wherein said n-1 level fusion centers being a higher level than the third level of fusion centers.

In an analogous art, Inoue teaches a method according to Claim 8, further comprising providing a single nth level fusion center, n being an integer greater than 4, said nth level fusion center receiving decisions from a plurality of n-1 level fusion

Art Unit: 2623

centers, wherein said n-1 level fusion centers being a higher level than the third level of fusion centers (figure 5).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add hidden levels to the neural network, as taught by Inoue, to the method disclosed by Graves and Tsai. The motivation would have been to allow the process to be more accurate.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graves in view of Tsai as applied to the claims above, and further in view of Yuen.

Referring to claim 18, Graves and Tsai do not disclose a system according to Claim 15, wherein memory comprises a network server.

In an analogous art, Yuen teaches a system according to Claim 15, wherein memory comprises a network server (figure 11, part 350).

At the time of the invention it would have been obvious for one of ordinary skill in the art to move the neural network to a network server, as taught by Yuen. The motivation would have been to enable the user set top boxes to be simpler by doing the calculations on the server.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graves in view of Tsai as applied to the claims above, and further in view of Kim.

Referring to claim 21, Graves and Tsai do not disclose a system according to Claim 19, wherein the display resides in a remote control.

In an analogous art, Kim teaches a system according to Claim 19, wherein the display resides in a remote control (paragraph 46, lines 1-3).

At the time of the invention it would have been obvious for one of ordinary skill in the art to add the remote viewer, taught by Kim, to the system disclosed by Graves and Tsai. The motivation would have been to allow the user to view the recommendations without interrupting the display of video on the television.

(10) Response to Argument

Page 6, paragraph beginning with "The present invention":

The appellant gives an overview of the invention.

Page 7, section beginning with "It is":

The appellant reviews the three requirements to establish a prima facie case of obviousness.

1. The appellant argues that there is no suggestion or motivation to modify the reference or combine the reference teachings. Graves discloses a system for providing a program recommendation using a neural network to analyze data (column 6, lines 17-52). Tsai teaches a device for performing pattern recognition using a neural network on an image to perform matching, which can bypass portions of the neural network if a match is made in the earlier levels (column 4, lines 1-17). The examiner used the motivation that it "would have been to enable the result to be available sooner, as it would only pass through the first level of logic." This motivation was expanded on in the Advisory Action mailed 1/17/08, where the examiner stated that providing a result

Art Unit: 2623

sooner would be an advantage, as speed is always important to consumer electronics. This is supported in Tsai (column 1, lines 41-45), by indicating that the process would increase the speed of the pattern recognition.

2. The appellant argues that there would need to be a reasonable expectation of success. As both references use neural networks to analyze and perform pattern matching on data sets, although different types of data sets, these are seen as interpreted as analogous arts. Further, neural networks, like CPUs can be used for different functions. To suggest that a neural network could only be used for the specific application described is not well taken since one of ordinary skill would expect similar results (i.e. quicker recognition) in any set of comparisons.

3. The appellant argues that the references must teach or suggest all the claim limitations. The references used in the above rejections teach or suggest all of the above limitations specifically as follows.

Page 7, last paragraph:

The appellant argues that Graves does not disclose the limitation of "(f) providing a plurality of second level fusion centers for receiving the first enhanced decisions output from a group of said first level fusion centers, if the first enhanced decisions are not within a pre-defined range." The examiner agrees with the appellant since the levels of Graves are dependant on the previous level's outcomes.

Page 8, first paragraph:

The appellant discusses the invention disclosed by Tsai.

Page 8, last paragraph:

The appellant argues that there is no motivation to combine the references, and that the examiner used hindsight in his rejection. As stated above, the examiner did have motivation to combine the references which was located in the Tsai reference.

The appellant also argues that just because both references use neural networks, that this does not make them combinable. The examiner disagrees as neural networks are used to sift through large amounts of data and provide an answer by analyzing small pieces of data at once in a highly parallel method. As the references both analyze large sets of data, one being program recommendation data and the other being image data, to find a match. The examiner interprets the references as being analogous and therefore combinable.

Page 9, first paragraph:

The appellant argues that speeding up a process is not a valid reason for combining references. As shown above, Tsai teaches that it is an advantage to provide a quicker result, which for anyone has used consumer electronics has experienced; too much delay in a process will lead in a negative experience for the user, and lead to poor market performance.

Page 9, second paragraph:

Art Unit: 2623

The appellant argues that the references must teach or suggest all the claim limitations. The references used in the above rejections teach or suggest all of the above limitations.

Page 9, last paragraph:

The appellant states that the limitations in claim 15 contain similar features as found in claim 1. Therefore the arguments applied to the rejection of claim 1, also apply to claim 15.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Justin Shepard

/Justin E Shepard/

Examiner, Art Unit 2623

Conferees:

Chris Kelley

/Chris Kelley/

Supervisory Patent Examiner, Art Unit 2623

Application/Control Number: 10/029,830
Art Unit: 2623

Page 17

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Supervisory Patent Examiner, Art Unit 2623